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A redescription of *Metaleptophallus gracillimus* (Lüh e 1909)
Yamaguti 1958 (Trematoda, Plagiorchiidae)

Redeskrpcja *Metaleptophallus gracillimus* (L ü h e 1909)
Y a m a g u t i 1958 (Trematoda, Plagiorchiidae)

A trematode, found in the pharynx of a *Natrix natrix* (L.) was described by Lühe in 1909 under the name of *Distomum gracillimum*. The author, however, did not classify more precisely the systematic position of this species ranging it within the collective genus *Distomum*; he merely gave a short description without any drawing of the specimen. In 1958, Yamaguti ranged it within the sub-family *Leptophallinae* Dayal, 1938, on the grounds of the description given by Lühe, and created a new genus for it: *Meta-leptophallus*. Still, there was no precise description nor drawing of this trematode up till now; neither was known the distribution of the parasite.

Whilst carrying out investigations on *Natrix natrix* (L.) in Poland during the period 1959 — 1960, the present authoress found a certain amount of trematodes which she determined as *Metaleptophallus gracillimus* (Lühe 1909) Yamaguti 1958. These trematodes were found in the pharynx of the snakes together with *Leptophallus nigrovenosus* (Bellingham 1844) Lühe 1909.

The extent of invasion of both of these species was practically the same: *M. gracillimus* — 58 per cent. and *L. nigrovenosus* — 50 per cent. However, there was a marked difference in the average intensity of invasion, the numbers of the parasite specimens in one host being 15.7 and 2.3, respectively. All in all, 188 specimens of *M. gracillimus* and 14 of *L. nigrovenosus* were found in a total of 12 snakes examined. Simultaneous occurrence of both of these species was stated in four out of these 12 *Natrix natrix* (L.) specimens.

Description of species. The material collected contained trematodes of different age ranging from very young specimens, still in the intestine of the snake, to fully developed ones, in the pharynx. Owing to the dark brown eggs filling up 3/4 of the body, the description of the internal organs will be based on the younger trematodes with already mature eggs.

Dimensions of the trematodes:

body length a.	width	1.18 - 1.99 × 0.47 - 0.71 mm.
oral sucker		0.22 - 0.28 × 0.22 - 0.30 mm.

mately at $1/3$ body length; it is shifted towards the middle of the body in younger trematodes.

Clusters of glands, fine-grained in structure, are disposed on the sides of the pharynx in front of the intestinal branches. Isolated or grouped ducts of these glands open to the exterior around the oral sucker, and to the ventral side of the fore part of the body.

Digestive tract. A very short praepharynx, visible in the more considerably outstretched specimens only. A large, very muscular pharynx. Short oesophagus. The intestinal bifurcation is situated halfway between the suckers or closer to the ventral one. Relatively short intestinal ramifications, ending not far off behind the ventral sucker.

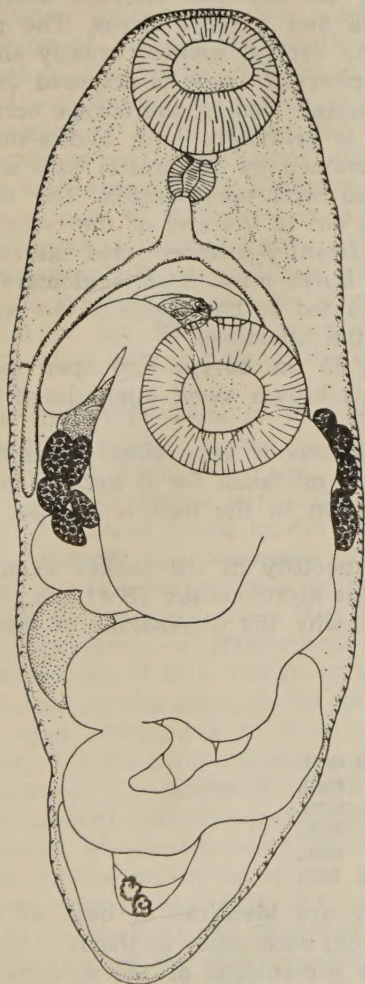


Fig. 2. *Metaleptophallus gracillimus* (Lühe 1909) adult specimen

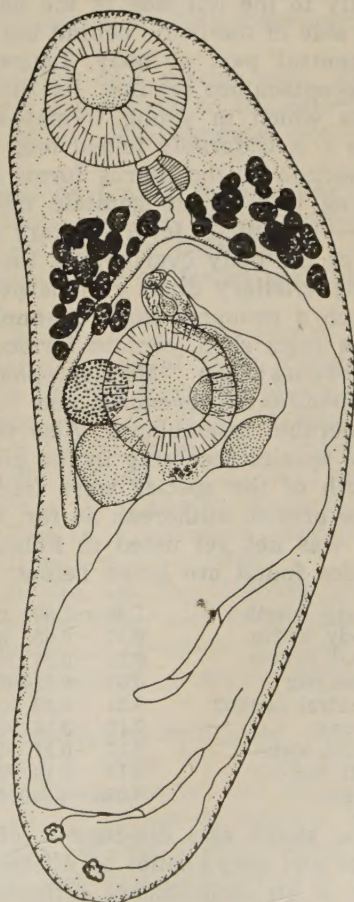


Fig. 3. *Leptophallus nigrovenosus* (Bellingham 1844) adult specimen

Excretory system. Solely an Y-shaped excretory vesicle was observed. Its main trunk is relatively wide and long, bifurcating between the testes; the two short branches reach to the end of the intestine. There are, inside the vesicle, relatively large in size and highly refractile concretions which remain during the whole life of the trematode.

Genital system. Two large, spherical testes are situated obliquely in the rear half of the body. Vasa efferentia come off the testes and unite at the level of the back edge of the ventral sucker forming vesicula seminalis externa, a relatively long, shaft-like formation, situated on the right side of the ventral sucker, partly covered by the latter. Its end enters the bursa cirri where it forms vesicula seminalis interna. The small bursa cirri is disposed in front of the ventral sucker. Besides the vesicula seminalis interna, it contains a short pars prostatica and a short cirrus. The porus genitalis is situated directly in front of the ventral sucker, usually shifted slightly to the left side of the body. The spherical ovary is disposed on the right side of the body, behind the ventral sucker. Nearly, the oötype occupies the central part of body. Laurer's canal is relatively long and s-shaped. No receptaculum seminis. Its function is assumed by the initial part of the uterus which in young trematodes is filled with spermatozoa. The uterus forms a considerably folded loop stretching out to the end of the body. The end section of the uterus forms an insignificantly differentiated metraterm opening into atrium genitale next to the bursa cirri. Two agglomerations of 5 — 12 follicles form vitellary glands, situated on both sides of the central part of the body overlapping the ends of the intestines.

The vitellary ducts run perpendicularly to the oötype and open into it through a common, short channel. The dark-brown ovoid operculated eggs, with a thick shell, contain formed miracidia.

Discussion. *Metaleptophallus gracillimus* is very closely related to *Leptophallus nigrovenosus* and can be easily mistaken for it because of the considerable resemblance. Also the localization in the host is identic, both of the species occurring in the pharynx.

Both of the species were found simultaneously in the snakes examined by the present authoress. So far, *Leptophallus nigrovenosus* (Bellingham 1844) was not yet noted in Poland; that is why the dimensions of the trematodes found are listed below:

body length	1.28 — 1.97 mm.
body width	0.47 — 0.65 mm.
oral sucker	0.23 — 0.27 × 0.24 — 0.29
pharynx	0.076 — 0.090 × 0.080 — 0.100 mm.
ventral sucker	0.21 — 0.28 × 0.19 — 0.27 mm.
ovary	0.10 — 0.16 × 0.09 — 0.13 mm.
right testis	0.17 — 0.21 × 0.10 — 0.20 mm.
left testis	0.13 — 0.19 × 0.11 — 0.14 mm.
eggs	0.035 — 0.040 × 0.017 — 0.021 mm

The shape and dimensions of the body are identical in both of these species and they cannot be differentiated from each other at the first glance. There is an insignificant difference in the dimensions of the suckers. The ventral sucker of *L. nigrovenosus* is usually smaller than the oral one, while it is the contrary in *M. gracillimus*. However, this difference is not consider-

able and trematodes with suckers equal in size were found in both of these species. The basic difference between the two species (and at the same time — between the two genera) consists in the disposition of vitellary glands: in front of the ventral sucker in *L. nigrovenosus*, and behind it in *M. gracillimus*.

There is a sufficiently marked difference in the testes disposition too; they are arranged obliquely in the posterior part of the body in *M. gracillimus* while in *L. nigrovenosus* they usually are arranged at one level directly behind the ventral sucker. That is why the branches of the excretory vesicle are disposed in front of the testes or are partly overlapped by them in *M. gracillimus* while in *L. nigrovenosus* the excretory vesicle does not reach the testes.

In both of these species are identical such organs like the cirrus sac and the oötype. Neither did the present authoress observe any difference in disposition of the porus genitalis which was situated submedially, directly in front of the ventral sucker in both of the species discussed; therefore, this feature cannot be accepted as a diagnostic one in dividing these animals into species as Yamaguti did.

Numerous well developed glands around the oral sucker were observed in both species. The presence of the three concretions in the excretory vesicle of both of these species is indicative of the developmental processes being similar in both of them.

Metaleptophallus gracillimus was first found by Lühe, probably in Germany. In Poland, this species is rather common, and the present authoress found it in the Mazury region, Northern Poland (the Gdzy Lake), and in the central part of Poland (the region of Dąblin and of Rawka near Skiernewice).

This trematode seems to have been found by Stossich as early as 1895. This author mentioned two species of trematodes; one of them, *Distomum nigrovenosum* Bellingham, was found in the mouth cavity of *Tropidonotus natrix* (= *Natrix natrix* (L.)) from Rome while the other, *D. signatum* Dujardin, was found in the pharynx of *T. natrix* from the environs of Trieste, ~~Rennes and Schwerin~~. The trematode defined by Stossich as *D. nigrovenosum* corresponds to the description of *Leptophallus nigrovenosus* (Bellingham 1844) while that defined by him as *D. signatum* corresponds to the description of *Metaleptophallus gracillimus* (Lühe 1909).

The suckers of this trematode are equal in size, and the vitellary glands are situated on the sides, in the medial part of the body; also the dimensions of its eggs correspond to those of *M. gracillimus*. However, because the description is not complete and the drawing lacking, one cannot be absolutely sure whether it concerns *M. gracillimus*.

The present authoress presumes that the description mentioned concerns the species *Metaleptophallus gracillimus* (Lühe 1909) for no other trematode species occurring in the pharynx of *Natrix natrix* and possessing the characters indicated by Stossich is so far known to science. Still, Stossich may be not regarded as the author of this species because of erroneous use of the denomination *Distomum signatum* Dujardin 1845, which already was a synonym of *Distomum nigrovenosum* Bellingham 1844 = *Leptophallus nigrovenosus* (Bellingham 1844) Lühe 1909, and

consequently was a homonym in a closely related genus. That is why, to the present authoress mind, Lühe is to be considered the author of the species discussed, and the correct denomination to be used in the literature should read thus: *Metaleptophallus gracillimus* (Lühe 1909) Yamaguti 1958, synonyms: (1) *Distomum signatum* Stossich 1895, nec Dujardin 1845, (2) *Distomum gracillimum* Lühe 1909.

Several older authors (Diesing 1858, Linstow 1879, Monticelli 1893, Mühling 1898, and others) too have also mentioned *Distomum nigrovenosum* Bellingham and *D. signatum* Dujardin as separate species. However, the species may be not identified because of the lacking descriptions and drawings.

In 1958, Yeh Liang-Sheng et Fotedar transferred the trematode *Astiotrema emydis* Ejsmont 1930 into the genus *Leptophallus* Lühe 1909; however, they did not give any reasons for doing so. On comparing the well-known description of *Astiotrema emydis* on the one hand to the only species of the genus *Leptophallus*, *L. nigrovenosus*, and to the only species of the related genus *Metaleptophallus*, *M. gracillimus* on the other, the present authoress came to the conclusion that the occurring morphologic differences were not sufficient to range this species within the genus *Leptophallus* Lühe 1909. *Astiotrema emydis* has a receptaculum seminis and a large bursa cirri of a different structure, without vesicula seminalis externa. These characters do not find any room even within the diagnosis of the sub-family *Leptophallinae* Dayal 1938. The species *Astiotrema emydis* Ejsmont 1930 is — to the present writer's mind — to remain within the genus *Astiotrema* Looss 1900.

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STRESZCZENIE

Autorka podaje redeskrypcję *Metaleptophallus gracillimus* (Lühe 1909) Yamaguti 1958, przywry występującej w przelyku zaskrońca *Natrix natrix* (L.) w Polsce. Gatunek ten był znaleziony u 58% zbadanych węży. Dla porównania podane są wymiary pokrewnego gatunku *Leptophallus nigrovenosus* (Bellingham 1844) Lühe 1909. Oba gatunki są znalezione w Polsce po raz pierwszy. Do synonimów *Metaleptophallus gracillimus* została wprowadzona nazwa *Distomum signatum* Stossich 1898, nec Dujardin 1845.

Autorka uznaje za niesłuszne wprowadzenie przez Yeh Liang-Sheng et Fotedar gatunku *Astiotrema emydis* Ejsmont 1930 do rodzaju *Leptophallus* Lühe 1909 i proponuje pozostawienie go nadal w rodzaju *Astiotrema* Looss 1900.

